

I Implementation Irregularities

Time limit: 1s

Impressed by the performance of the top teams at the recent BAPC preliminaries, you started to wonder whether teams were allowed to use one or multiple computers to implement their solutions.

Instead of unnecessarily bothering the organization with more questions, you will figure this out by yourself. Being a jury member, you already have estimates for the computer time required to solve each problem.

Using this information, and the time in the contest at which the top team solved each of their solved problems, compute the minimal number of computers used by the team.

The team may work on multiple problems before getting any one of them accepted. Furthermore, the contestants are great multitaskers and can work on a single problem using multiple computers at the same time, but each computer can only be used for one problem at a time.

Input

The input consists of:

- One line containing an integer n ($1 \leq n \leq 10^5$), the number of problems in the contest.
- One line containing n integers $t_1, t_2, \dots, t_n$ ($1 \leq t_i \leq 10^4$), the computer time required to solve problem i .
- One line containing n integers $s_1, s_2, \dots, s_n$ ($1 \leq s_i \leq 10^9$ or $s_i = -1$), the time at which problem i was solved, or -1 if it was not solved.

It is guaranteed that the team solved at least one problem.

Output

Output the minimum number of computers used by the team.

Sample Input 1	Sample Output 1
11 50 8 10 6 300 5 6 3 18 5 12 117 23 63 6 -1 48 80 42 37 13 131	1

A	B	C	D	E	F	G	H	I	J	K
117 1 try	23 1 try	63 3 tries	6 1 try	7 7 tries	48 1 try	80 1 try	42 1 try	37 2 tries	13 1 try	131 1 try
149 1 try	44 1 try	74 1 try	30 1 try	2 2 tries	14 1 try	194 5 tries	36 1 try	19 1 try	56 1 try	113 1 try
74 2 tries	11 1 try	186 3 tries	8 1 try		28 1 try	55 2 tries	20 1 try	51 3 tries	294 7 tries	100 3 tries
196 2 tries	15 1 try	189 2 tries	24 1 try		39 1 try	85 1 try	60 1 try	140 3 tries	105 2 tries	298 2 tries
257 1 try	46 1 try	124 3 tries	11 1 try	1 1 try	92 4 tries	178 4 tries	75 3 tries	60 2 tries	243 3 tries	227 1 try
157 1 try	55 1 try	136 1 try	11 1 try	1 1 try	68 1 try	144 1 try	40 1 try	39 1 try	2 2 tries	204 3 tries
183 1 try	7 3 tries	133 3 tries	12 1 try		84 2 tries	27 1 try	38 1 try	72 2 tries		262 2 tries
125 1 try	19 3 tries	159 4 tries	16 3 tries	1 1 try	29 1 try	99 2 tries	46 2 tries	80 1 try	3 3 tries	209 2 tries
51 1 try	28 1 try	78 1 try	17 1 try		101 3 tries	229 1 try	41 1 try	153 3 tries		278 3 tries
138 2 tries	27 1 try	169 2 tries	18 1 try	1 1 try	58 4 tries	108 3 tries	38 1 try	113 2 tries	5 5 tries	224 2 tries
225 2 tries	45 2 tries	156 1 try	95 1 try	1 1 try	140 2 tries	42 1 try	116 1 try	81 1 try		290 2 tries
238 1 try	12 1 try	97 2 tries	20 1 try		50 2 tries	216 4 tries	75 2 tries	143 1 try	295 3 tries	
160 3 tries	9 1 try	181 3 tries	16 1 try		130 3 tries	168 3 tries	148 1 try	163 3 tries	2 2 tries	299 2 tries

Scoreboard of the BAPC 2021 preliminaries

Sample Input 2

1
10
3

Sample Output 2

4

Sample Input 3

2
2 4
3 3

Sample Output 3

2

Sample Input 4

2
4 6
10 10

Sample Output 4

1